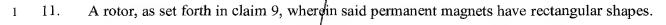
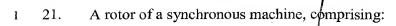
What is claimed is:

1	1.	A rotor of a synchronous machine, co	mprising
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- an iron core segment per pole; and
- at least two permanent magnets per pole.
- 1 (2) A rotor, as set forth in claim 1, wherein said rotor has a plurality of poles.
- 1 3. A rotor, as set forth in claim 1, wherein said permanent magnets have rectangular shapes.
- 4. A rotor, as set forth in claim 1, wherein said permanent magnets are tangentially
- 2 magnetized.
- 1 5. A rotor of a synchronous machine, comprising:
- two iron core segments with additional pole piece per pole; and
- one permanent magnet per pole.
- 6. A rotor, as set forth in claim 5, wherein said rotor has a plurality of poles.
- 7. A rotor, as set forth in claim 5, wherein said permanent magnets have trapezoidal shapes.
- 1 8. A rotor, as set forth in claim 5, wherein said permanent magnets are tangentially
- 2 magnetized.
- 1 9. A synchronous machine with a rotor comprising:
- one or more iron core segments per pole;
- one or more permanent magnets per pole;
- 4 an optional squirrel cage; and
- a stator with a winding selected from the group consisting of a Dahlander pole-
- 6 changing winding, a pole- amplitude modulated winding, and a pole- phase modulated winding
- 7 with toroidal coils.
- 1 10. A rotor, as set forth in claim 9, wherein said rotor has a plurality of poles.



- 1 12. A rotor, as set forth in claim 9, wherein said permanent magnets are predominantly
- 2 tangentially magnetized.
- 1 13. A synchronous machine with a rotor comprising:
- 2 one or more iron core segments per pole;
- one or more permanent magnets per pole;
- 4 an optional squirrel cage; and
- a stator with a winding selected from the group consisting of a Dahlander pole-
- 6 changing winding, a pole- amplitude modulated winding, and a pole- phase modulated winding
- 7 with toroidal coils.
- 1 14. A rotor, as set forth in claim 13, wherein said rotor has a plurality of poles.
- 1 15. A rotor, as set forth in claim 13, wherein said permanent magnets have trapezoidal
- 2 shapes.
- 1 16. A rotor, as set forth in claim 13, wherein said permanent magnets are predominantly
- 2 tangentially magnetized.
- 1 17. A rotor of a synchronous machine, comprising:
- one iron core segment per pole;
- 3 one tangentially magnetized permanent magnet per pole; and
- 4 one or more coils per pole.
- 1 18. A rotor, as set forth in claim 17, wherein said rotor has a plurality of poles.
- 1 19. A rotor, as set forth in claim 17, wherein said permanent magnets are tangentially
- 2 magnetized.
- 1 20. A rotor, as set forth in claim 17, wherein said coils can be separately excited.



- one iron core segment per pole;
- one tangentially magnetized permanent magnet per pole;
- 4 one radially magnetized permanent magnet per pole; and
- one or more coils per pole.
- 1 22. A rotor, as set forth in claim 21, wherein said rotor has a plurality of poles.
- 1 23. A rotor, as set forth in claim 22, wherein said coils can be excited separately from each
- 2 other.
- 1 24. A rotor of a synchronous machine, comprising:
- 2 two iron core segments per pole; and
- 3 two tangentially magnetized permanent magnets per pole.
- 1 25. A rotor, as set forth in claim 24, wherein said rotor has a plurality of poles.

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